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 GB 1510447
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(58) Field of search
 E1G
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(54) Portable road surface hump

(57) A portable speed restriction hump 7 for placing or securing on a road surface comprises at least one hollow or solid block 1 (e.g. of rubber, plastics, wood or concrete) having a flat base and a curved upper surface. Juxtaposed blocks 1 may have interlocking formations or be interconnected by a bar 6 (possibly telescopic). The hump may incorporate a counting switch. The base may have a channel to accommodate a fire hose or cable crossing the road. Figures 13, 14 (not shown) illustrate (a) a block carrying a sign post (51) and (b) a ring of blocks (60) forming a round-about.

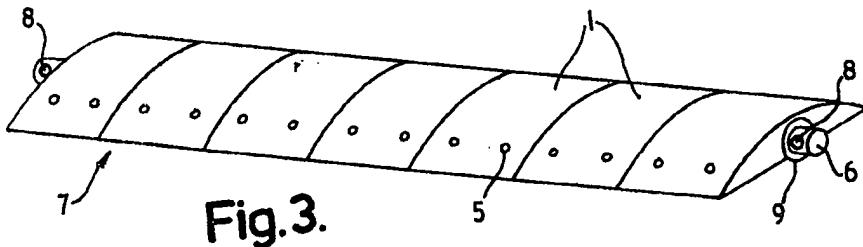


Fig.3.

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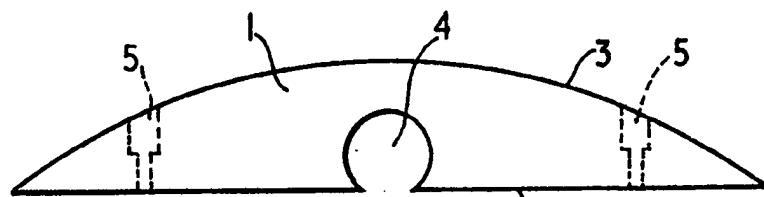


Fig.1.

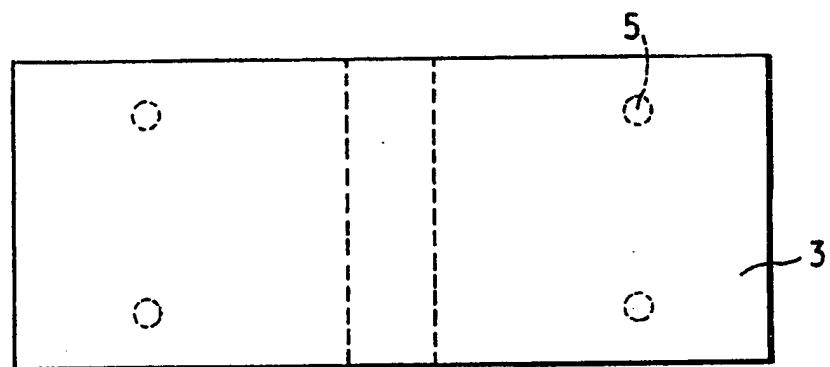


Fig.2.

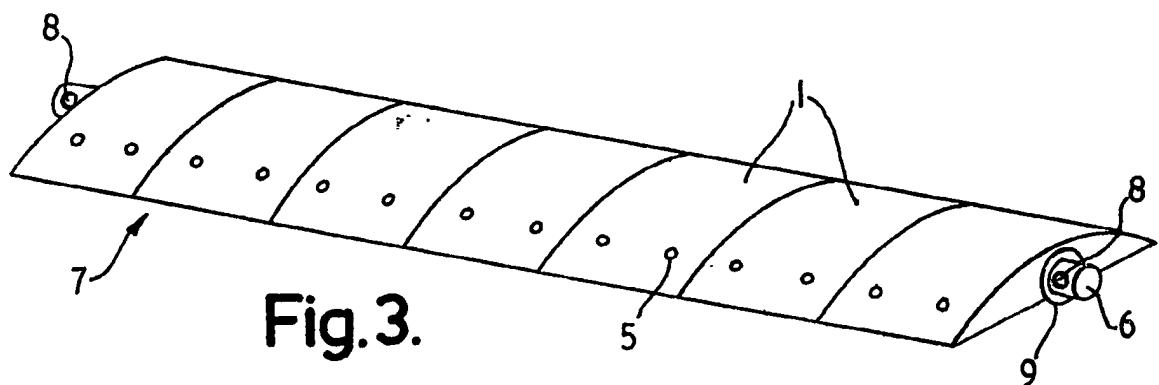


Fig.3.

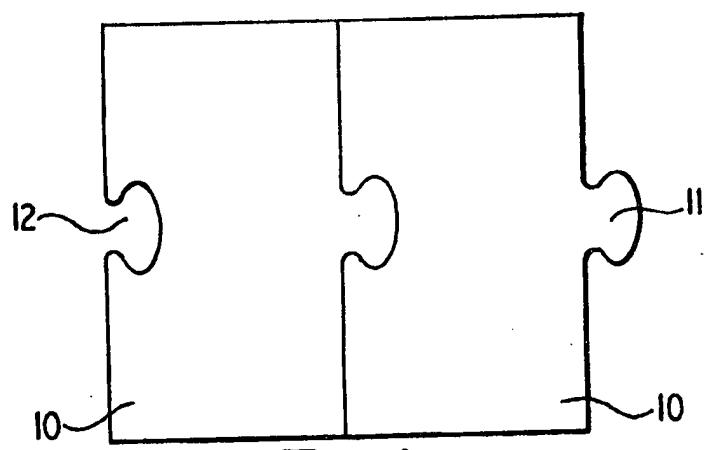


Fig.4.

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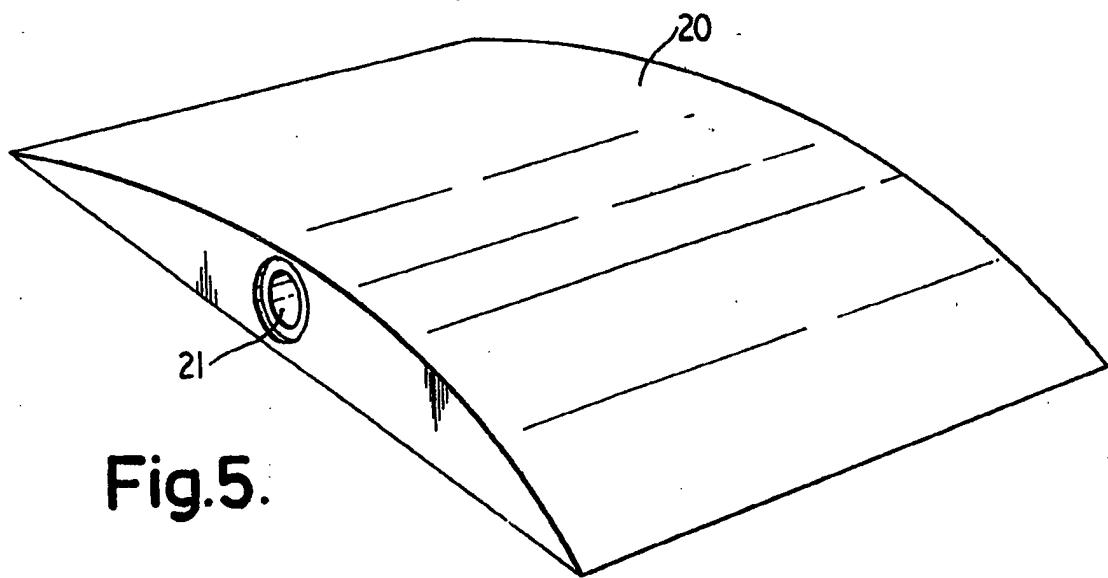


Fig.5.

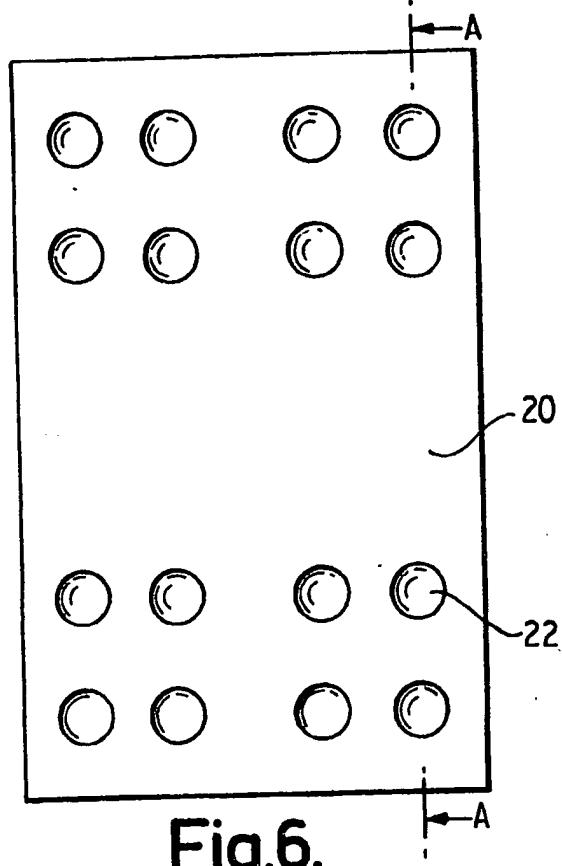


Fig.6.

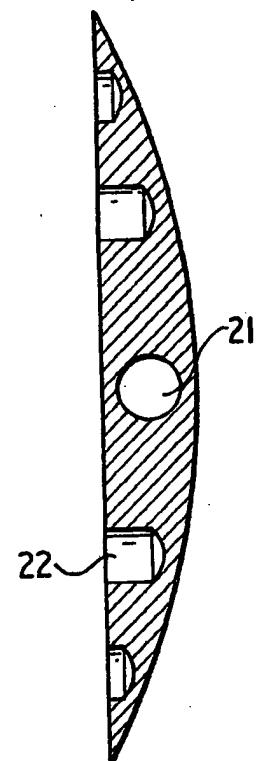


Fig.7.

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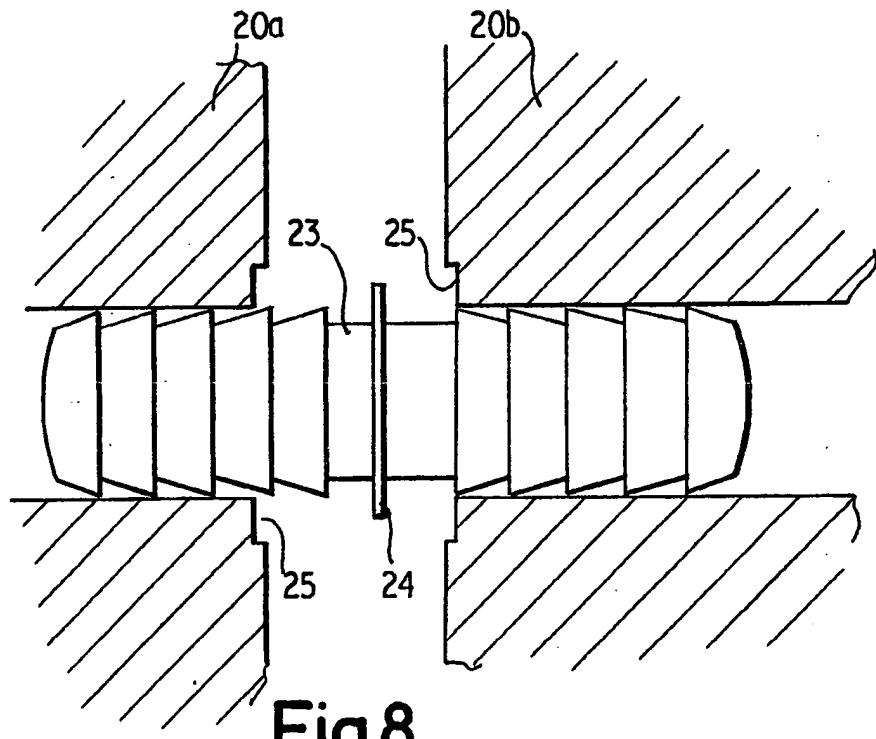


Fig.8.

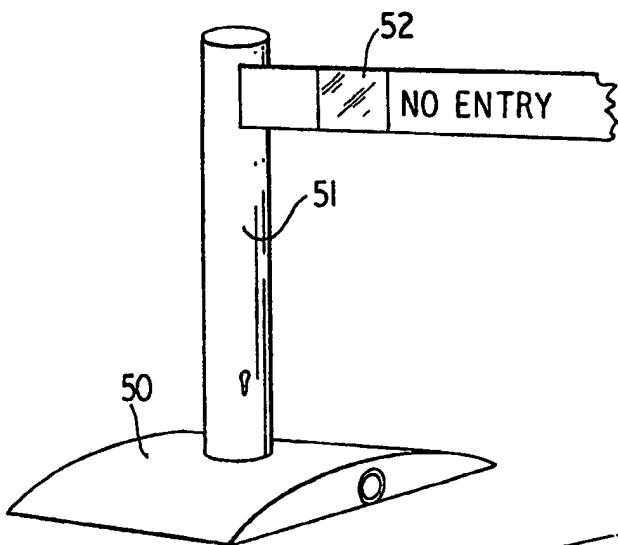


Fig.13.

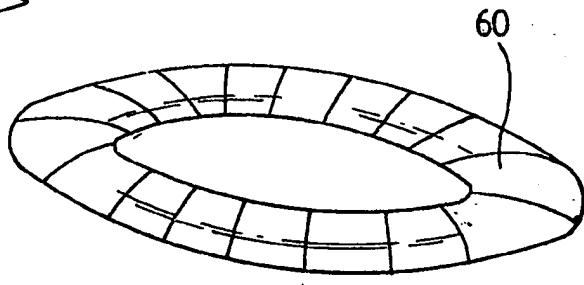


Fig.14.

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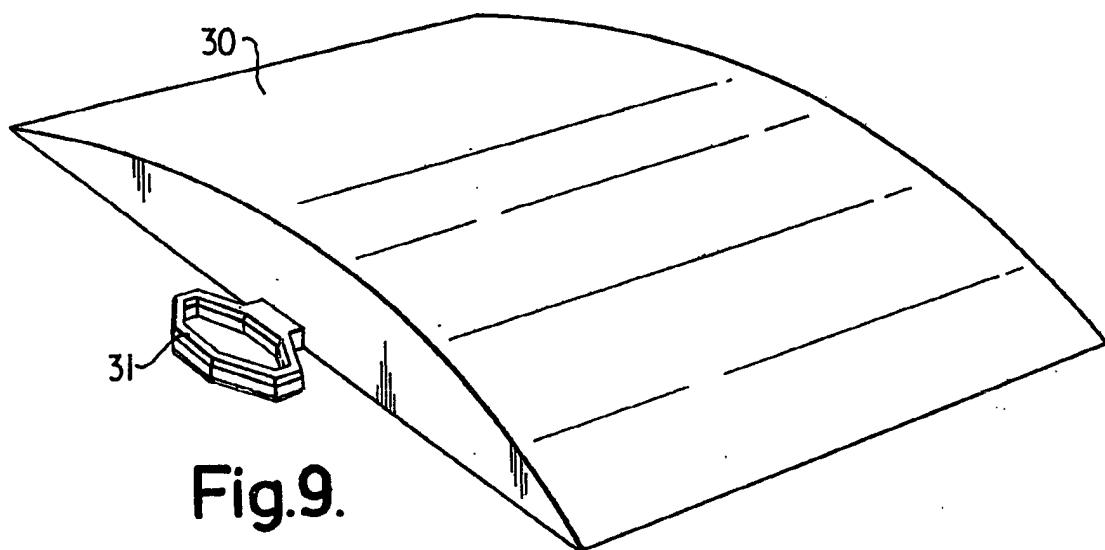


Fig.9.

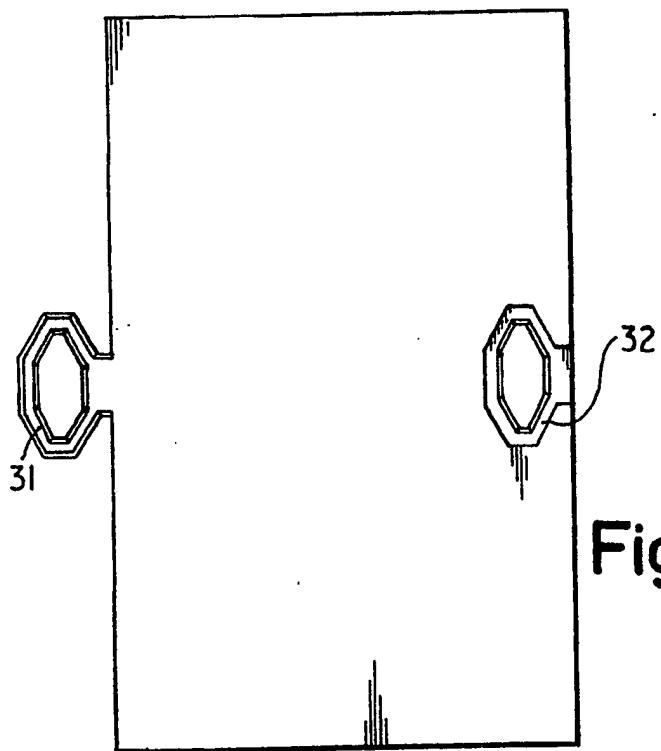


Fig.10.

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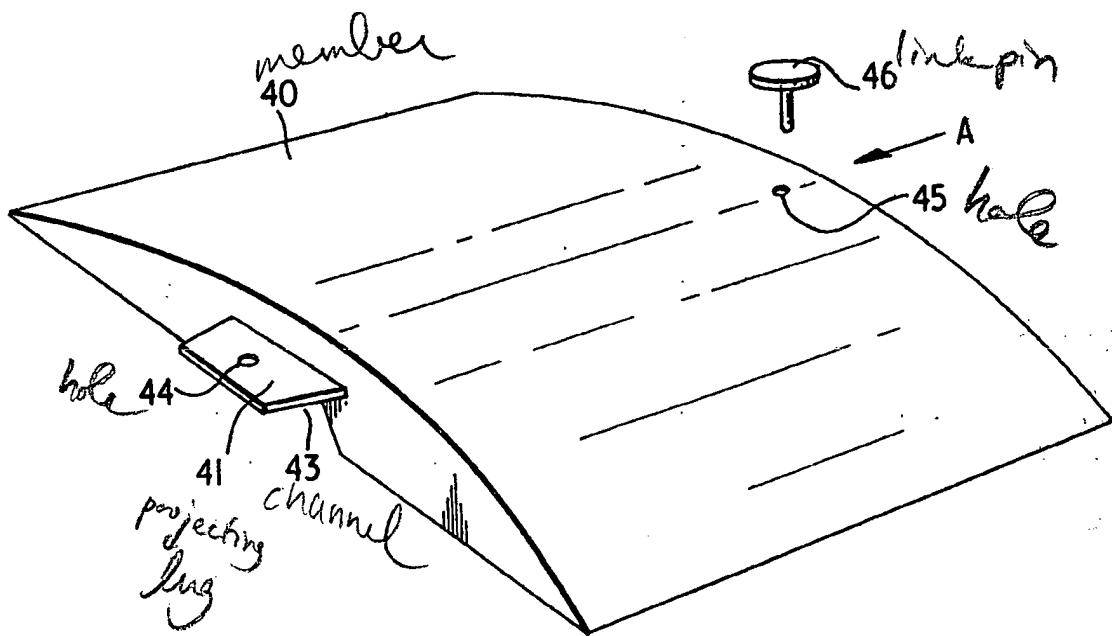


Fig.11.

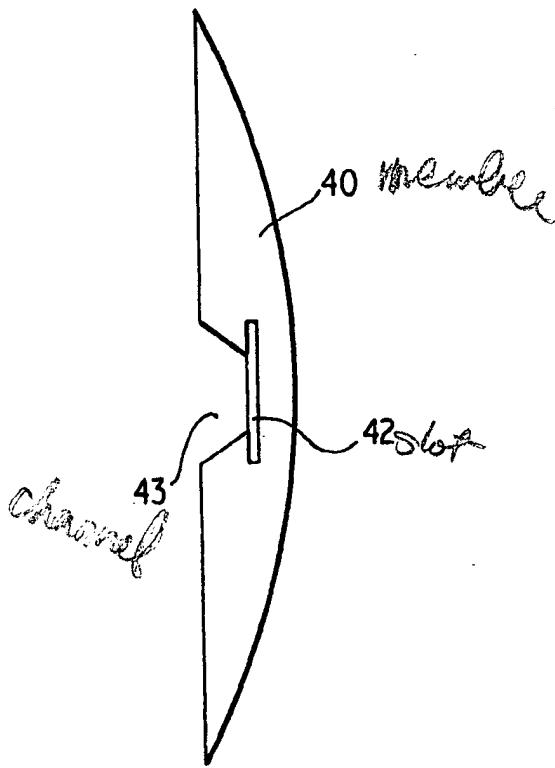


Fig.12.

SPECIFICATION

Road vehicle speed restriction devices

- 5 This invention relates to devices for restricting the speed of vehicles along a road.
- For the purpose of restricting the speed of a vehicle along a road, it is known to provide one or more shallow humps on the road. Such humps are 10 usually made of concrete or tarmac or asphalt, and are a permanent fixture on the road surface. They are used, for example, in car parks, where it is desired to restrict the speed of a vehicle to, say, 5 to 10 miles per hour.
- 15 According to one aspect of the present invention, there is provided a temporary speed-restriction device for road vehicles, the device comprising a body having a generally flat base and an upper surface which is curved to present a hump to road vehicles passing over the body.
- By "temporary", it is meant that the device can be laid across a road when required, and removed when necessary.
- The body may be of any suitable material, such as 25 concrete or wood, but is advantageously of a rubber and/or plastics material.
- In a preferred embodiment of the invention, the body comprises a succession of individual members, each having a generally flat base and a curved 30 upper surface, and assembled together in any desired manner. In such an arrangement, the body can be built up to various lengths, as required.
- According to another aspect of the present invention, there is provided a method of erecting a 35 temporary speed restriction device for road vehicles, the method comprising laying across the road a body having a generally flat base and an upper surface which is curved to present a hump to road vehicles passing over the body.
- 40 For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, in which:
- Figure 1* is a side elevation of a member for use in 45 a speed-restriction device for road vehicles;
- Figure 2* is a top plan view of the member;
- Figure 3* shows a speed-restriction device comprising a plurality of members as shown in Figures 1 and 2;
- 50 *Figure 4* is a plan view of a variant of the member of Figures 1 and 2;
- Figure 5* is a perspective view of another variant of the member of Figure 1;
- Figure 6* is an underside view of the member of 55 Figure 5;
- Figure 7* is a section on the line A-A of Figure 6;
- Figure 8* is a sectional detail view showing a connection between two members as shown in Figure 5;
- 60 *Figures 9 and 10* are respectively perspective and underside views of further variants of the member of Figure 1;
- Figure 11* is a perspective view of another variant of the member of Figure 1;
- 65 *Figure 12* is a side elevation onto the side A of

Figure 11; and

Figures 13 and 14 show respective modified embodiments of the invention.

The member 1 shown in Figures 1 and 2 is

- 70 preferably made of durable rubber (or rubber compound), and has a generally flat base 2 and an upper surface 3 in the form of a shallow curve. A cylindrical passage 4, which is of circular cross-section and can optionally open into the base 2 of the member 1, 75 passes through the member between opposite sides thereof. There are optionally provided holes 5 which are for receiving securing bolts, and which extend between the upper surface 3 and the base of the member.
- 80 A plurality of members 1 are assembled side by side on a cylindrical metal bar 6, to form the speed-restriction device 7, as shown in Figure 3. The bar 6 passes through the passages 4 in the members 1.
- 85 In use, the device 7 can be assembled at a desired location by assembling a desired number of members 1 on the bar 6, to provide an elongate body of any desired length. In this respect, the bar 6 itself may be built up of a plurality of sections as desired, 90 or may be telescopic. The members 1 are held on the bar 6 by means of bolts or pins 8 which engage in the bar 6, and bear against washers 9. The device 7 is then simply laid across a road surface, where it presents a shallow hump to road vehicles passing 95 over it.
- Due to the relatively shallow curve of its upper surface, the device 7 will normally remain in place on a road surface simply due to its own weight, and due to the wedging effect of any car tyres passing over it.
- 100 However, if it is desired to affix the device more securely, or over a protracted period of time, securing bolts or nails can pass through the holes 5 to secure the device 7 to the road. In addition to this, the base 2 of each member 1 is preferably formed 105 with means for assisting the base 2 to grip on the road surface. For example, the base 2 may be provided with a tread (e.g. in the form of straight or wavy ribs), or with shallow suckers. Alternatively, the base 2 may be formed with a plurality of fine 110 knife cuts across the base. Advantageously, the upper surface 3 also has a tread, for example, in the form of ribs or stippling, for improved safety.
- As indicated above, the members 1 are desirably of a durable rubber or rubber compound. For 115 example, a suitable rubber would be the type known as SBR (Styrene-Butadiene Rubber) which should give the members sufficient strength for long life, and sufficient weight to ensure that the members 1 stay in position in use. The members 1 can of course 120 be produced quite economically of relatively cheap plastics material. Although this would not be very attractive if a long life was desired, the use of a cheap plastics material may find application in producing cheap members for emergency use only.
- 125 If desired, the members 1 may be of any other suitable members. An alternative construction comprises hollow members 1 which are filled with concrete, for economy and for increased weight. If made from rubber (natural or synthetic), the members 1 advantageously have a hardness of 75° - 85°
- 130

IRHD.

It will be appreciated that the speed-restriction device 7 has many applications. For example, where a temporary outdoor event is being held, speed-

- 5 restriction devices 7 may be used in car-park areas or pedestrian areas to prevent cars travelling at excessive speeds. Another important use of the device 7 is at the scenes of accidents or other road hazards. At the scene of an accident, a succession of devices 7
- 10 could be quickly laid across a road upstream of the accident, to ensure that traffic speed is adequately reduced. If desired, a succession of graded devices 7 could be laid along the road, the humps becoming progressively steeper as a vehicle travels over them,
- 15 such that the speed of the vehicle is progressively reduced.

The device 7 can be adapted for many other uses. For example, it may be adapted to fit over a fire hose extending from a fire engine at the scene of a fire. In

- 20 another modification, the device 7 may carry switching means (e.g. microswitching means or field effect switching means), for triggering an electrical counting mechanism or other device (e.g. actuation of traffic lights at temporary road works).

- 25 In order that the device 7 is unobtrusive, it may conveniently be made of black coloured material. Alternatively, the device may be made prominent by employing various colourings. For example, alternate members 1 may be coloured black and yellow.
- 30 When the members 1 are of rubber (or plastics) material, the colouring may advantageously be contained in the material itself, such that it does not readily wear out. Although the illustrated device 7 is shown as being straight, it may alternatively be
- 35 curved, or V-shaped to form a chevron across the road.

It will be appreciated that the actual dimensions of the members 1 will depend upon the speed to which it is desired to restrict road vehicles passing over the

- 40 members. By way of example; each member 1 may be between 2 and 5 inches high, between 12 and 24 inches wide (over the hump), and between 2 and 12 feet long (transversely of the hump). As specific examples, each member 1 may be three inches high, fifteen inches wide, and two feet long. Alternatively, each member 1 may be four inches high, fifteen to twenty inches wide, and twelve foot long. The bar 6 may conveniently comprise a standard 1 $\frac{3}{4}$ " scaffolding bar. However, instead of employing a bar 6 of
- 45 circular cross-section, the bar may be of, for example, square cross-section, the holes 5 in the members 1 being similarly shaped, to inhibit rotation of the members 1 about the bar 6.

Although, in the arrangement illustrated in Figures

- 50 1 to 3, a speed restriction device is composed of a plurality of individual members, it is possible alternatively to provide a device such as 7 in which the elongate body is formed as a single piece. Such an arrangement is evidently less advantageous from
- 55 the point of view of easy transportation and storage, however.

Figure 4 shows an alternative arrangement for securing a plurality of members 10 together. The members 10 are generally similar to the members 1

60 of Figures 1 and 2, except that, instead of being

provided with a central passage 4, they are provided with interlocking male and female parts 11 and 12. By means of these interlocking parts, any desired number of members 10 may be secured together,

- 70 without the need of a central bar 6. The male and female parts 11 and 12 may have any suitable configuration, other than that illustrated.

In the variant illustrated in Figures 5 to 8, a plurality of members 20 may be secured together to

- 75 form a device such as 7, by means of ribbed cylindrical plugs 23 engaging in holes 21 formed in the members 20. Figure 8 shows two members 20a and 20b in the process of being joined together by a plug 23. The plug 23 has a locating collar 24 which
- 80 engages in recesses 25 at the mouths of the holes 21. The hole at the right-hand side (as seen in Figure 8) of the member 20a is of slightly smaller diameter than that in the facing left-hand side of the member 20b, allowing easier removal of the plug 23 from the
- 85 member 20b. In a modification, each member 20 may be provided with an integral plug such as 23 at one side, and only one corresponding hole 21 at an opposite side. As may be seen in Figures 6 and 7, each member 20 is formed with recesses 22 opening
- 90 in the base thereof. The recess 22 may be provided in any desired configuration. They serve to economise on the amount of material used in manufacturing the members 20, without significantly affecting the strength thereof. Recesses such as 22 may be
- 95 provided, if desired, in any of the embodiments described herein.

The member 30 which is shown in Figures 9 and 10 is particularly convenient to use. At one side, the member 30 is formed with a projecting handle 31. At

- 100 its other side, the member 30 is formed with a correspondingly shaped recess 32. A plurality of members 30 are simply interengaged by placing the recess 32 of one member over the handle 31 of an adjacent member such that the handle 31 and recess
- 105 32 firmly interlock. When the members 30 are disengaged, the handles 31 serve as convenient carrying means. In Figures 9 and 10, the handle 31 may be formed integrally with the member 30 in, for example, a moulding operation. Alternatively, the
- 110 member 30 may be formed with a recess 32 at each of two opposite sides, and the handle 31 provided as a separate symmetrically double member having, in fact, two oppositely facing handles each for engagement in a respective recess 32 of two adjacent
- 115 members 30. If desired, one of the two recesses 32 of such a member 30 may be made slightly smaller than the other, to give a preferentially tighter engagement with the handle 31.

Figures 11 and 12 illustrate a member 40 having in

- 120 its base a channel 43 such that the member is suitable for placing over fire hoses, electric cables, or the like. For interengagement with adjacent members, the member 40 has a projecting lug 41 at one side thereof, and a corresponding slot 42 at an opposite
- 125 side thereof. The lug 41 of one member engages in the slot 42 of an adjacent member, and then a link pin 46 passes through registering holes 44 and 45 respectively in the lug 41 and opening into the slot 42. The link pin 46 is illustrated only diagrammatically
- 130 in Figure 11, and conveniently, its head lies flush

in a corresponding recess in the member 40. The pin 46 may engage the hole 44 and/or 45 resiliently, and/or may be positively secured by threaded engagement with a nut, or by other means. Alternatively the pin 46 may be a split pin.

As a variant to the illustrated embodiments described above, end members may be provided which, in addition to being curved in one direction, are tapered or curved towards another side, to 10 provide a smooth ramp, instead of an abrupt step, at the ends of a device such as 7.

Figures 13 and 14 illustrate how the invention may be adapted to special uses. In Figure 13, a member 50 is adapted to receive a post 51 which supports a 15 barrier 52. In Figure 14, a plurality of curved members 60 are assembled to form a roundabout, which may be substantially circular, as shown, or elliptical.

20 CLAIMS

1. A temporary speed-restriction device for road vehicles, the device comprising a body having a generally flat base and an upper surface which is 25 curved to present a hump to road vehicles passing over the body.

2. A device according to claim 1, wherein said body comprises a plurality of individual members assembled side by side, each member having a 30 generally flat base and a curved upper surface.

3. A device according to claim 2, wherein said members are formed with holes and assembled together by at least one connecting element engaged in at least two of said holes.

35 4. A device according to claim 3, wherein said members are assembled together on a common connecting element passing through registering holes in said members.

5. A device according to claim 3, wherein each 40 said member carries a plug at one side thereof and is formed with a corresponding hole at an opposite side thereof for receiving a respective said plug of an adjacent said member.

6. A device according to claim 5, wherein each 45 said plug is removably engaged in a respective hole in said one side of the respective said member.

7. A device according to claim 6, wherein said hole at said one side of each said member is of smaller diameter than said hole at said opposite 50 side.

8. A device according to claim 2, wherein each said member is formed with corresponding male and female parts on opposite sides thereof, such that the male part of one member interlocks with the 55 female part of an adjacent member.

9. A device according to claim 8, wherein said male part is in the form of a handle, and said female part is in the form of a correspondingly shaped recess.

60 10. A device according to claim 9, wherein each said member has a respective said recess at each of said opposite sides, and each said male part is symmetrically double-handled, each handle being arranged to engage a respective said recess.

65 11. A device according to claim 9, wherein each

said male part is formed integrally with the respective said member.

12. A device according to claim 2, wherein each said member is formed with a lug at one side 70 thereof, and a slot at an opposite side thereof, such that the lug of one member engages the slot of an adjacent member.

13. A device according to claim 12, wherein each said member is provided with a link pin which 75 engages in registering apertures respectively opening into the respective said lug.

14. A device according to any preceding claim, wherein the base of said body is formed with a tread.

15. A device according to any preceding claim, 80 wherein said upper surface of said body is formed with a tread.

16. A device according to any preceding claim, wherein said body is provided with securing means for securing the body to a road surface.

85 17. A device according to any preceding claim, wherein said securing means comprises bolt holes formed in said body.

18. A device according to any preceding claim, 90 wherein said body is formed with a plurality of recesses opening into the base thereof.

19. A device according to any preceding claim, wherein said body is formed with a channel opening into the base thereof and extending transversely of said hump.

95 20. A device according to any preceding claim, wherein said body is of rubber.

21. A device according to any preceding claim, wherein said body is of plastics.

22. A device according to any preceding claim, 100 wherein said body is coloured with alternate stripes of contrasting colours.

23. A device according to any preceding claim, wherein said body is generally straight.

24. A device according to any one of claims 1 to 105 22, wherein said body is generally curved.

25. A device according to claim 24, wherein said body is circular or elliptical.

26. A device according to any preceding claim, 110 wherein said body carries a post for supporting a barrier.

27. A device according to any preceding claim, wherein said body carries electrical switching means responsive to a vehicle passing over the device.

28. A device according to any preceding claim, 115 wherein said body has a height of between 2 and 5 inches.

29. A device according to claim 28, wherein said body has a height of between 3 and 4 inches.

30. A device according to any preceding claim, 120 wherein the base of said body has a width, in the direction of travel over the hump, of between 12 and 24 inches.

31. A device according to claim 30, wherein the base of said body has a width, in the direction of 125 travel over the hump, of between 15 and 20 inches.

32. A device according to any preceding claim, wherein the base of said body has a length, transversely of said hump, of between two and twelve feet.

130 33. A speed-restriction device substantially as

hereinbefore described with reference to Figures 1 to 3, with reference to Figure 4, with reference to Figures 5 to 8, with reference to Figures 9 to 10, or with reference to Figures 11 and 12, of the accompanying drawings.

34. A speed-restriction device according to claim 33, as modified by Figure 13 or 14.

35. An individual said member of claim 2, or of any of claims 3 to 32 as dependent therefrom, or of claim 33 or 34.

36. A method of erecting a temporary speed restriction device for road vehicles, the method comprising laying across the road a body having a generally flat base and an upper surface which is curved to present a hump to road vehicles passing over the body.

37. A method according to claim 36, wherein said device is in accordance with any one of claims 2 to 34.

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